

REMARKS

Claims 1-14, 26-27, 29-42 remain in the application and new claims 43-46 are presented. Claims 15-25 and 28 are withdrawn pursuant to the first election / restriction requirement. Claims 43, 44, 46 and 46 are supported in the specification in the Detailed Description, beginning on page 7.

In a subsequent election / restriction requirement on October 10, 2005 the Examiner states that that he requested an oral election to be made by Rhett Brockington on September 14, 2005, but the telephone call did not result in an election being made. In the election / restriction requirement that was mailed on October 10 the Examiner broke the claims into two groups.

2nd Group I Claims 1, 4-14, 26, 27, 29, 33-37 and 39 drawn to a fiber reinforced laminate classified in class 4287, subclass 114.

2nd Group II Claims 2,3, 29-32, 38 and 40-42 drawn to a fiber reinforced laminate with a polymerizing agent therein, classified in class 554, subclass 141.

On the first restriction requirement mailed June 29, 2005, the claims had been classified as

1st Group I Claims 1-14, 26, 27 and 29-42 drawn to a fiber reinforced laminate classified in class 428, subclass 114.

1st Group II Claims 15-25 and 28 drawn to a method for making a fiber reinforced laminate material, classified in class 464, subclass 464.

The first restriction appears to be appropriate, however the second restriction appears to be improper, as it has a number of problems:

- a) There is no class 4287;
- b) Claim 1 reads on “a layer comprised of a polymerizable component comprised of chemically reactive components” and clearly it would fall into 2nd Group II, not 2nd Group I, except that Class 554 subclass 141 is for “catalytic hydrogenation of organic compounds”; and
- c) Claim 29 is classified in both 2nd Group I and 2nd Group II.

The second restriction is clearly incorrect, and so Applicant is responding as if the Examiner never meant to issue the second restriction, therefore claims 1-14, 26, 27 and 29-42 are pending. New Claims 43 – 46 are also pending in the application.

Claims 1, 4-14, 26, 27, 29, 33-37 and 39 stand rejected under 35 U.S.C. 112, second paragraph. In claim 1, lines 9, the phrase, "is sufficiently open" is vague and indefinite, and line 10, the phrase, "to enable the migration" is not a positive manipulation.

Applicant's claim 1 is currently amended, deleting the wording "sufficiently open" and "enable the migration". The Examiner asks if the enablement is essential. The invented composition is a laminate material for forming a composite having a surface that is resin rich. Obviously, the process of converting a laminate (which has distinct layers) to a composite (which does not have distinct layers) requires the movement / fusion of the thermoplastic resin layer and the polymerizable component layer with the layer of reinforcing fibers, and in order to have movement / fusion then the layer of reinforcing fibers must be permeable to be impregnated / saturated. As currently amended, claim 1 clearly reads that the layer of reinforcing fibers is permeable to the thermoplastic resin and the polymerizable component when heated and compressed. The viscosity limitation is not important as to the polymerization, as the Examiner has suggested, but is important to the final properties of the resulting composite. The formed composite has a surface that is rich in the polymerized polymerizable component, and this surface finish has heretofore been unattainable using conventional glass mat thermoplastics. The value of a surface that is rich in the polymerized polymerizable component is that the surface finish is suitable for products that have a visible surfaces (i.e., body parts). Amended claim 1 further limits when impregnation/saturation of the layer of reinforcing fibers occurs.

With regard to claim 11, Examiner states that there is not proper antecedent basis for "Thermoplastic polyolefin".

Applicant's claim 11 depends from claim 10 which reads "thermoplastic resin is selected from the group consisting of polyolefins." Clearly there is proper antecedent basis for "Thermoplastic polyolefin". No correction is required.

With regards to claim 8, Examiner states that the Markush groups are improper.

Applicant's claim 8 (currently amended) now properly recites the Markush group.

Examiner has rejected claim 27 under 35 USC 112 (b) as being indefinite as to "Class-A" surface and "exposure to heat and pressure". Applicant's claim 27 (Currently Amended) has eliminated the indefinite wording.

Claims 1, 4-14, 26, 27, 33-37 and 39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (US 5165990). The Examiner states that the cited reference teaches the basic claimed invention including multilayered laminated fiber reinforced material comprising thermoplastic resin layer, reinforcing fibrous layer and a layer comprising chemically reactive components. The Examiner references col. 9, lines 6-30; col. 12, lines 56- col. 13, line 15; col. 14, lines 32-34; col. 17, lines 63-68 of Nakano. It is ironic that the Examiner states that the cited reference teaches a layer comprising chemically reactive components, as this is in direct contradistinction to the Examiner's classification, wherein the classification reads on laminates not having a polymerizing agent. Examiner states that the reference teaches polymerizing the material in

col. 9, lines 64-68; col. 10, lines 10-16; col. 14, lines 39-54. The Examiner submits it would have been obvious to utilize temperatures during such polymerization to impart any claimed viscosity for the thermoplastics, in the absence of unexpected results. Additionally, such utilization would have been further obvious since it has long being held that discovering an optimum value of a result effective variable as viscosity, involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215(CCPA 1980). Applicant respectfully disagrees.

Applicant's claim 1 (currently amended) teaches a laminate having layers, where one layer is reinforced fibers, a second layer is an extruded thermoplastic resin, and a third layer is an extruded polymerizable component. The layers are not mixed nor fused until the time it is desired to form a composite, because when the composite is formed the polymerizable component polymerizes. Nakano teaches in col. 3 lines 37 – 50 that shape is not important (ergo layers are not important). The (a) component is predominately polystyrene, and for instance it can be mixed with the (b) component, which is predominately fibers, or laminated (line 47) or molded (line 48). Applicant's invention polymerizes when it is molded, while Nakano's invention is fully polymerized. Nakano teaches the addition of component (c), which is substantially a polyphenylene ether to component (a) to improve the adhesion to (b) (col. 3 lines 63-64). Nakano teaches that the polyphenylene ether has polar groups, and these groups improve the adhesion. Nakano does not teach a third layer that is polymerizable. Furthermore, Nakano does not teach the utility of a layer that is polymerizable, where that layer will tend to move to the surface when melted, and polymerize at the surface, therein forming a surface that has less fiber content, and in general more accurately produce a finish that

reflects the mold's surface. The Examiner is clearly in error when he states that reference teaches polymerizing the material. Nakano teaches compounding, not polymerizing. Nakano's composition is fully polymerized.

Concerning claim 8, the Examiner states that the reference teaches the claimed fibers in col.7, lines 45-60.

Examiner has omitted rejections to claims 4-7, which read on elements not taught by Nakano. Claim 4 reads that the chemically reactive components are selected from the group consisting of low molecular weight polymers, macrocyclic oligomers, linear oligomers, prepolymers, monomers, cyclic esters, dimers, trimers, tetramers and the like, or any combination thereof. There is no counterpart in Nakano. Claims 5 and 6 expand on the components of the composition of the polymerizable layer, stating that it can be further comprised of a thermoplastic polymer. In view of the fact that these claims are not rejected, the Applicant requests that claims 4-7 be allowed.

With regards to claim 8, the Examiner is correct there is overlap, however, in those lines (col.7, lines 45-60) the Nakano also teaches that the components (a) and (b) can be mixed, and this teaches away from Applicant's invention, as mixing would result in polymerization prior to molding.

Concerning claim 9, the Examiner states that the reference teaches glass mat in col. 17, lines 64-68, as required by claim 9. In col. 10, lines 23-49 and col. 9, lines 41-42, the reference teaches similar thermoplastic resin as required by claims 5, 10 and 11.

Claim 9 is dependent on claim 1, and by virtue of its dependency is not obvious. Applicant's claim 5 teaches that a thermoplastic resin can be added to the layer of chemically reactive components that comprise the polymerizable components. Nakano doesn't have a polymerizable component layer, so there is no counterpart in Nakamao. Claim 10 reads on "polyolefins; polyesters, polyurethanes, polyacrylates, copolymers, terpolymers ionomers of copolymers". Nakano teaches polystyrene and polyphenylene ether. Neither polystyrene nor polyphenylene ether are covered by claim 10. Claim 11, which depends from claim 10, claims a thermoplastic polyolefin resin selected from the group consisting of polypropylenes, ethylene propylene copolymers, ethylene propylene diene monomer, TPCs and TPEs. Nakano doesn't teach any of these polymer groups. The rejection is improper, and is respectfully traversed.

The Examiner has rejected claims 12, 13 and 14, stating that the reference teaches similar additives in col. 9, lines 24-39; col. 2, lines 64- col. 3, line 3; col. 12, lines 1-11; col 12, lines 5-20; etc. The reference also teaches similarly claimed oligoester as required by claims 4, 6, 33-35 and 39.

Applicant's claims 12, 13 and 14 are dependent claims, depending from claim 1, and by virtue of their dependency are not obvious.

Claim 4 claims "polyolefins; polyesters, polyurethanes, polyacrylates, copolymers, terpolymers ionomers of copolymers". Nakano teaches polystyrene and polyphenylene ether.

Neither polystyrene nor polyphenylene ether are covered by claim 4.

Claim 6 claims chemically reactive components that are selected from the group consisting of low molecular weight polymers, oligomers, prepolymers, monomers, dimers, trimers, tetramers and the like, and any combination thereof. Nakano has no chemically reactive polymers, low or high weight. His compounds are polystyrene and polyphenylene ether. There is no overlap, and clearly no obviousness.

Applicant's claims read on macrocyclic oligoester in claims 33-35 and 39. These are large cyclic ester compounds that open up when they polymerize. Nakano doesn't teach esters, reactive compounds, nor cyclic compounds. There is absolutely no basis for this rejection.

Concerning claim 7, the reference teaches the fibers in col. 9, lines 40-68. Concerning claim 26, 36 and 37, the reference teaches polycarbonate material in col. 9, lines 40-68.

Claim 7 is a dependent claim, and by virtue of its dependency is not obvious.

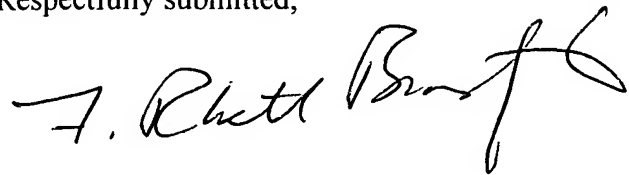
Applicant's argue that, regarding claim 26 and claims 36-37, the reference teaches that the polyphenylene ether can be cut in a number of materials, polycarbonate being one. Nakano does not teach in the case of claim 26 that the polycarbonate is the thermoplastic resin forming a layer of the laminate. Nakano's polyphenylene ether is the (c) component that is mixed in small amounts with the (a) component which is predominately polystyrene. Applicant's thermoplastic resin constitutes

one of the layers in the polymerizable laminate. The reference to polycarbonate in Nakano is as a processing aid for compounding polyphenylene ether into the polystyrene. In the case of claim 36, the polycarbonate is part of a polymerizable component. Claim 37 teaches that the polycarbonate is >50% of the weight of the polymerizable component layer. Nakano doesn't have a polymerizable component layer, and there is no teaching that it is present in large amounts in the laminate. The Examiner's reference to *In re Aller*, 105 USPQ 233, states that in the absence of unexpected results, such claimed material would be have been obvious. In actuality, the unexpected result would be if Nakano's composition polymerized, as there are no polymerizable components present. The reference, *In re Aller*, 105 USPQ 233, is nonsensical, as it is not applicable. Furthermore, Nakano teaches that all components can be combined (see col. 3, lines 38 –49). If mixing occurred in Applicant's invention, then no surface rich in resin would be formed in mold stage, wherein polymerization occurs. Thus, it is abundantly clear that all claims in the case are patentable over the reference.

Since no more claims are presented than the number originally paid for, no additional fees are submitted.

In view of the foregoing amendment and these remarks, this application is now believed to be in condition for allowance and such favorable action is respectfully requested on behalf of the Applicant.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "F. Rhett Brockington". The signature is fluid and cursive, with a large, stylized "B" and "C" at the end.

F. Rhett Brockington
Patent Agent for Applicant
Registration No. 29,618
DOUGHERTY | CLEMENTS
1901 Roxborough Road, Suite 300
Charlotte, North Carolina 28211
Telephone: 704/366-6642
Facsimile: 704/366-9744

FRB/bcb
Attorney's Docket 3813